Happiness in Japan: From the Viewpoint of Age, Sex and Relative Wealthiness

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Abstract: This paper is based on the results of a study: Forming a Social Well-being Research Consortium in Asia (2014-2018; study headed by Hiroo Harada) by the Center for Social Well-being Studies, Senshu University in Japan.

I mainly focus on a Web Survey on Lifestyle and Values for about 11,000 respondents in Japan conducted on February 2015. Several important and interesting findings of the survey are as follows.

First, the correlation between subjective happiness and life satisfaction from all samples of the survey results is rather high: the correlation factor is 0.836. Second, as predicted, the wealthier the household/personal income of the respondents, the higher their life satisfaction. Third, the life satisfaction's curve of the poorest is U-shaped according to age; that is, the life satisfaction of 30's /40's year old are rather low. To the contrary the life satisfaction of the wealthiest has become higher according to age: the value of 20's year old is the lowest and 60's the highest. Forth, the female's life satisfaction is almost higher at the same household/personal income level over all ages than the male's one.

These outcomes may be concluded from the compound elements of the social and economic position of the people.

Keywords: Happiness, Life-satisfaction, Well-being, Relative Wealthiness, Relative Income Hypothesis

1. Outline of the 2015 Survey of Japan

Based on the findings of the Center for Social Capital Studies, we at the Senshu University Center for Social Well-being Studies are conducting an International Comparative Survey on Lifestyle and Values to take a systematic look at these issues on a larger scale[1] (2014-2018; study headed by Hiroo Harada). Surveys were completed for Japan in February 2015, for South Korea in summer 2015 and for Vietnam in autumn 2015, with those for Thailand and the

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Table 1 (1) Sample Composition Distributed: Male

Municipality Size	Region	20-29	30-39	40-49	50-59	60-69	Total
special big cities	Hokkaido-Tohoku	26	32	28	27	26	139
	Kanto	160	211	190	144	154	859
	Chubu	38	49	45	41	45	218
	Kinki	56	67	61	54	66	304
	Chugoku-Shikoku	15	20	18	16	18	87
	Kyushu	21	25	22	21	21	110
big cities	Hokkaido-Tohoku	21	28	27	29	29	134
	Kanto	78	116	106	87	101	488
	Chubu	44	59	54	49	55	261
	Kinki	44	63	59	50	63	279
	Chugoku-Shikoku	18	29	25	27	30	129
	Kyushu	24	35	32	35	25	151
small cities	Hokkaido-Tohoku	40	53	51	62	60	266
	Kanto	97	146	135	127	142	647
	Chubu	71	112	103	101	114	501
	Kinki	46	69	65	61	73	314
	Chugoku-Shikoku	35	48	43	51	58	235
	Kyushu	42	53	50	63	60	268
towns and villages	Hokkaido-Tohoku	15	21	24	32	30	122
	Kanto	12	16	16	22	24	90
	Chubu	17	23	21	21	25	107
	Kinki	8	10	10	11	13	52
	Chugoku-Shikoku	6	11	10	12	14	53
	Kyushu	14	17	17	21	20	89
Total		948	1,313	1,212	1,164	1,266	5,903

Table 1 (2) Sample Composition Distributed: Female

Municipality Size	Region	20-29	30-39	40-49	50-59	60-69	Total
special big cities	Hokkaido-Tohoku	28	33	30	30	30	151
	Kanto	151	201	178	126	160	816
	Chubu	36	47	44	41	47	215
	Kinki	58	71	52	56	71	308
	Chugoku-Shikoku	16	21	14	17	19	87
	Kyushu	23	27	24	17	25	116
big cities	Hokkaido-Tohoku	22	29	28	31	33	143
	Kanto	79	108	97	72	107	463
	Chubu	41	57	52	50	58	258
	Kinki	47	66	61	54	70	298
	Chugoku-Shikoku	22	30	27	28	33	140
	Kyushu	31	37	36	37	37	178
small cities	Hokkaido-Tohoku	38	51	52	63	66	270
	Kanto	103	135	106	125	146	615
	Chubu	76	105	100	102	118	501
	Kinki	52	70	67	64	79	332
	Chugoku-Shikoku	34	46	44	53	62	239
	Kyushu	44	55	52	66	65	282
towns and villages	Hokkaido-Tohoku	16	23	24	31	26	120
	Kanto	14	17	13	19	23	86
	Chubu	16	21	20	22	25	104
	Kinki	8	10	11	12	14	55
	Chugoku-Shikoku	7	7	9	10	13	46
	Kyushu	11	17	13	16	21	78
Total		973	1,284	1,154	1,142	1,348	5,901

Philippines scheduled for summer 2016 and subsequently in other Asian countries following that. In this paper, we will report part of the findings from the surveys in Japan that were completed in February 2015.[2]

Respondents were asked in Question W01 about happiness and in Question W02a about Life Satisfaction. The correlation between subjective happiness and life satisfaction from the results for all segments of the survey is shown in Figure 1. The correlation factor is 0.836. Intuitively as well, the two are presumably mutually related. They are assumed to have either a mutual complementary or substitute-dependency relationship. Consequently, in this study we will focus on the factors and background that explain and define life satisfaction and happiness.

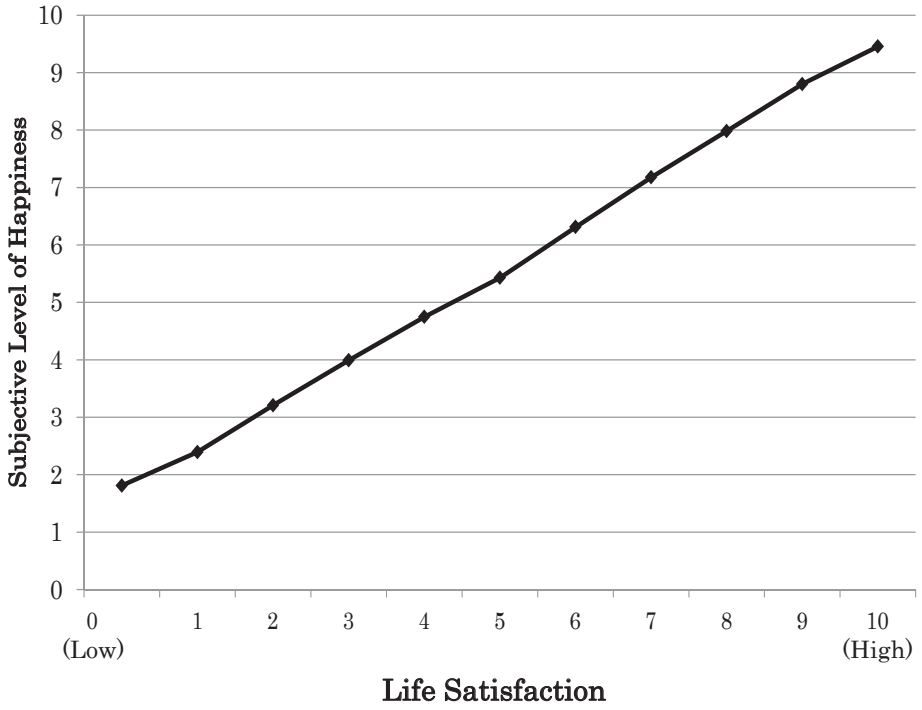

Figure 1: Subjective Level of Happiness and Life Satisfaction (r=0.836, p<0.001)

2. Approach from Relative Income Hypothesis

As Easterlin (1974) pointed out, each person's economic and material wealth is not directly related to his/her mental and psychological satisfaction/happiness. As Tolstoy said, "Happy families are all alike; every unhappy family is unhappy in its own way." At the beginning of his novel *Anna Karenina* (1873-77), the absolute level of economic and material resources does not necessarily correspond with one's satisfaction or happiness.

But for each person, either the successive enhancement of economic and material wealth

[2] The survey in Japan was conducted online with a sample size of 11,804 respondents. Details are given in Tables 1 (1) and 1 (2).

or the relative wealth compared with others would satisfy the feeling of achievement or superiority that constitutes a mental aspect of human beings as social creatures. Their satisfaction and happiness might be enhanced by either achieving economic growth or pursuing relative wealth.

We will try to examine the latter aspect by means of an empirical analysis based on the survey and some tax agency data. More precisely, we would like to examine the relative income hypothesis "Can happiness be measured by the degree of relative income?," which has been established as the foundation of consumption function since it was set forth by Duesenberry (1949).

There are three options for the data used to measure relative income in Japan's survey.

3. Subjective Wealth Data

Question W07 in the survey is "What do you think the current average income (pre-tax) is for those that graduated from the last school you attended?" This question is basically assessed in terms of subjective evaluation. This is based on the assumption of "School education contributing to modernization," or, more specifically, that his/her school background would be correlated to his/her later job selection and future income level.

The survey respondents have various types of educational backgrounds, ranging from compulsory education to graduate school. In addition, there are wide differences in the age and date of graduation from the last school. Question W07 is asked to determine if the respondent thinks he/she exceeds the income level of the former classmates or not and to what degree.

In Table 2, the effective sample size is 6,410, so the number is rather limited because of psychological constraints and the lack of information. The responses range widely from a minimum of 0.01 to a maximum of 70.00. In Figure 2, these are divided into seven equal parts. The respondents valued at 1, who think their income is similar compared with former classmates' income, are placed in Level 4, in which the average is 1.44 and the median is 1.00.

Table 2. Statistic detail of Subjective Wealthiness Level

Subjective Wealthiness Level	Min	Max	Average	Median
1(Low)	0.01	0.53	0.33	0.33
2	0.53	0.76	0.65	0.66
3	0.76	0.93	0.85	0.85
4	0.93	1.08	1.00	1.00
5	1.09	1.29	1.19	1.19
6	1.30	1.77	1.51	1.48
7(High)	1.80	70.00	4.60	2.41
All Samples	0.01	70.00	1.44	1.00
				N=6,410

4. Regional Income's Gini coefficient data

The income differences between regions where each respondent resides, expressed by Gini coefficients, might influence the respondent's feeling of wealth and happiness as well as his/her present income or revenue.

The respondent's residence or municipality in Japan can be identified by the 7-digit zip code provided in Question F14_P4 in the survey. The differences between the taxable incomes of taxpayers in municipalities can be expressed by the regional income's Gini coefficient. If its value in the area approaches 1, the differences or gaps of income in the area are greater; if it approaches 0, equal distribution has been realized in the area. This Gini coefficient can be calculated from the FY2012 Taxable Income database of the National Tax Agency for Local Tax in Japan[3].

Data was collected for almost the full sample, as very few respondents refused or neglected to reply. As a result, we have 10,778 responses in Table 3, where they are divided into seven equal parts. The minimum is 0.282 and the maximum 0.526, so that the average is 0.367 and the median is 0.367. On this scale, the Gini coefficient for the municipality with the middle regional income is classified as Level 4

Table 3. Statistic detail of Regional Income's Gini coefficient Level

Gini coefficient	Min	Max	Average	Median
1(Low)	0.282	0.334	0.328	0.330
2	0.334	0.351	0.345	0.345
3	0.351	0.360	0.356	0.356
4	0.360	0.369	0.365	0.364
5	0.369	0.378	0.374	0.375
6	0.378	0.391	0.385	0.386
7(High)	0.391	0.526	0.421	0.410
All Samples	0.282	0.526	0.367	0.364
				N=10,778

In summary, the wealth differences between municipalities in Japan are extremely small because the difference between the maximum and the minimum is only 0.150.

As for how the income differences in the area of residence affect the resident's happiness or satisfaction, there might be two opposing cases. The income differences in the area of residence might have a positive or negative effect on the individual's happiness or satisfaction.

[3] The regional income data are the sum of taxable incomes in each region of local individual income tax in Japan. The tax base of local individual income tax and national income tax in Japan is almost the same, with some difference between specific taxation rates, so that all taxable income for every Japanese taxpayer exceeding the exemption limits is included.

Therefore, this taxable income data does not include income earned by those whose income falls below the exemption limits, a category that accounts in Japan for almost 40% of income earners. The rate of non-taxpayers in a region might differ precisely between regions, but in this analysis the differences are disregarded for the sake of simplicity.

On the contrary, they may be unrelated to the individual's feelings. One is based on some altruism or tolerance, the other on selfishness or individualism.

5. Relative Income Hypothesis Data

For this survey, the relative wealth of the respondents as compared to the average economic strength and conditions of residents in the respondent's region of residence was used as the explanatory variable instead of using the respondent's economic strength and condition. Basically, the assumption is that respondents are likely satisfied with life or subjectively happy when comparing their situations to average income levels of residents in the same region, not based on their absolute income or earning amounts. The scale for relative wealth ranges from 0 theoretically up to infinity, with 1 representing an income (using household income for this study) equal to the average household income for the respondent's area of residence. Actual numerical values ranged between 0.050 and 11.375.

Figure 2 divides the number of respondents into seven equal relative wealth levels along the horizontal axis. The maximum, minimum, average and median values for each of the seven relative wealth levels is given in Table 4 for a sample size of 10,417, subtracting the 1,387 respondents with missing data who gave no response for household income. With the average and median for the second poorest Level 2 being close to the average household income levels at 1.037 and 1.050 respectively, the respondents for this survey can be presumed to be relatively wealthy compared to the average household income levels of Japanese citizens.

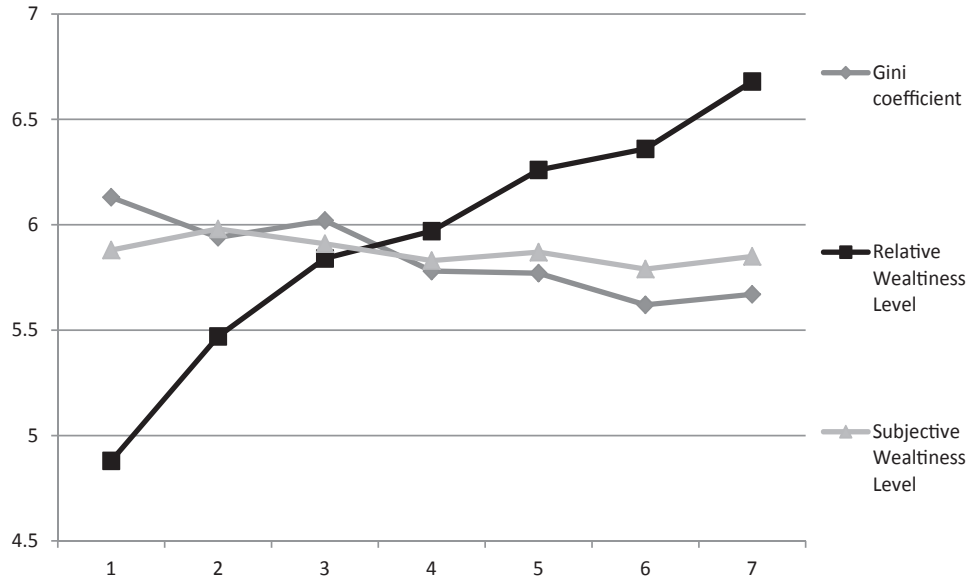

Figure 2: Comparison of Life Satisfaction (Gini coefficient, Relative and Subjective Wealtiness Level)

Table 4. Statistic detail of Relative Wealth Levels

Relative Wealth Levels	Min	Max	Average	Median
1 (Low)	0.050	0.838	0.515	0.563
2	0.839	1.212	1.037	1.050
3	1.212	1.546	1.384	1.380
4	1.547	1.941	1.745	1.738
5	1.942	2.413	2.171	2.165
6	2.414	3.167	2.748	2.724
7 (high)	3.167	11.375	4.364	3.949
All Samples	0.050	11.375	1.992	1.737
				N=10,417

With Level 1 being the least wealthy and Level 7 being the wealthiest, life satisfaction figures for each relative wealth level were 4.88 for Level 1, 5.47 for Level 2, 5.84 for Level 3, 5.97 for Level 4, 6.26 for Level 5, 6.36 for Level 6 and 6.68 for Level 7. As the graph increases overall moving to the right, this confirms that life satisfaction increases with higher relative wealth.

The following is a look at the age composition and life satisfaction for each of the wealth levels. Ages were classified into five categories: 20s, 30s, 40s, 50s, and 60 and older. As evident in Figure 2, the 60 and older segment is highest for the poorest Level 1 at 29%, followed by the 20s segment at 24%. For the second poorest Level 2, the 60 or older segment is highest at 30%, followed by the 30s segment at 22%. For Level 3 and up, percentages for the 40s and 50s segments increase as wealth level increases. For the wealthiest Level 7, the 50s segment is highest at 31%.

This progression in respondent age composition very typically and symbolically reflects the characteristics of Japanese employment and income. Many Japanese workers and employees engage in work from age 20 to 60, and most all wage structures from age 20 to retirement are still seniority-based. Accordingly, wages and income increase with age. Also, while Japanese retire at 60 and are then meant to live off of their pensions, many cannot live on their pension income alone and try to compensate for the shortfall by working at lower wage levels at a second or third workplace. In summary, the wealthiest Level 7 is most prevalent among those in their 50s with the highest wage levels and the highest life satisfaction at 6.68. Meanwhile, the poorest Level 1 has a life satisfaction of 4.88, and it comprises mostly pensioners in the 60 or older segment and the 20s segment at the lowest end of a seniority-based wage system.

However, as young people in their 20s can envision their wages eventually increasing in the future, they are not that discontent with the status quo. Those discontent with their current status are actually those in the 60 and older segment comprising much of the second poorest Level 2. This segment holds no prospects for hopeful developments in the future. Their lament for their current status is not unfounded.

Next, the relations between the age composition and life satisfaction for each wealth level are given in Figures 4(1) to 4(7). Figure 4(1) shows the age composition and life satisfaction for

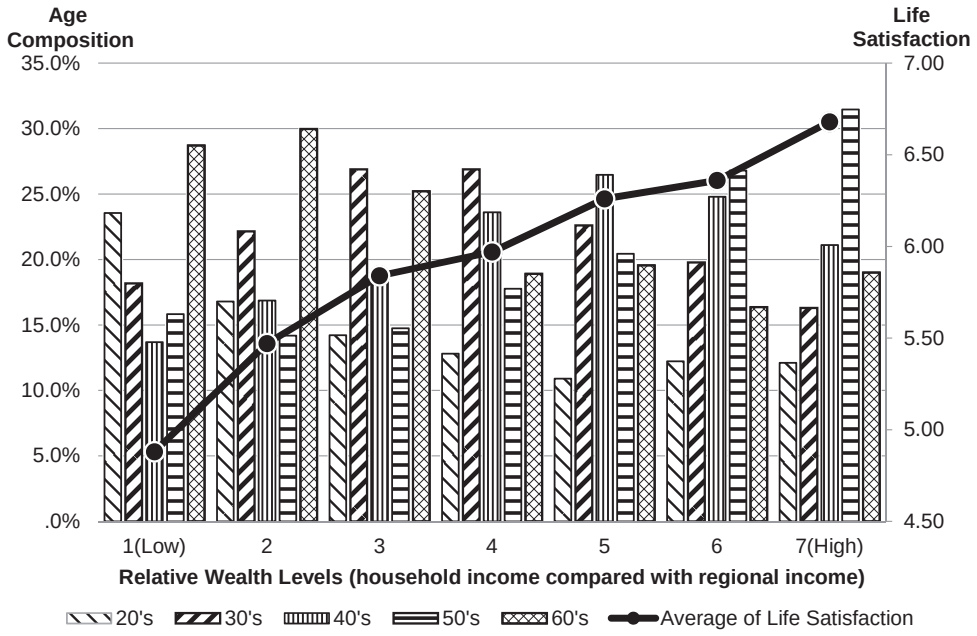

Figure 3: Age Composition and Life Satisfaction of Relative Wealth Levels

the poorest Level 1, and the age composition and life satisfaction for increasing wealth levels are presented in order following this, with Figure 4(7) showing the figures for the wealthiest Level 7. In this paper, only Figures 4(1), (4) and (7) are shown for the sake of simplicity.

The age composition and life satisfaction for each wealth level reveals U-shaped progressions in life satisfaction for Level 1 through Level 4, although this is quite pronounced in Level 1 and more understated in Level 4. For the poorest Level 1, life satisfaction is lowest for the 40s segment at 3.97 and nearly as low for the 30s segment at 4.03. These segments keep life satisfaction lower for this level. In the second poorest Level 2, life satisfaction levels are lower for the 40s segment at 4.57 and the 50s segment at 4.70, which both keep life satisfaction lower for this level.[4] In Level 3, life satisfaction is lowest for the 50s segment at 5.20. In Level 4, life satisfaction is lowest for the 50s segment at 5.53, but it is also low for the 40s segment at 5.70.

Meanwhile, life satisfaction is increasingly higher to the right of the table for the two wealthiest levels, Levels 6 and 7. Thus, life satisfaction increases with age. The 50s segment holds the majority share of Level 6 at 26%, with the 40s segment holding 25%. Both segments have a life satisfaction close to 6.3, almost the same as the 30s segment for that wealth level. The 60 and older segment has the highest life satisfaction at 6.66. The 50s segment holds the majority share of Level 7 at 31%, and life satisfaction is highest at 7.21 for the 60 and older segment, which comprises 19% of respondents in this level. The surprise for both Levels 6 and 7 is that

[4] In this sense, given that life satisfaction is roughly 6 for the 60 and older segment comprising the majority for the lower relative wealth Levels 1-3, life satisfaction for these levels is not necessarily low.

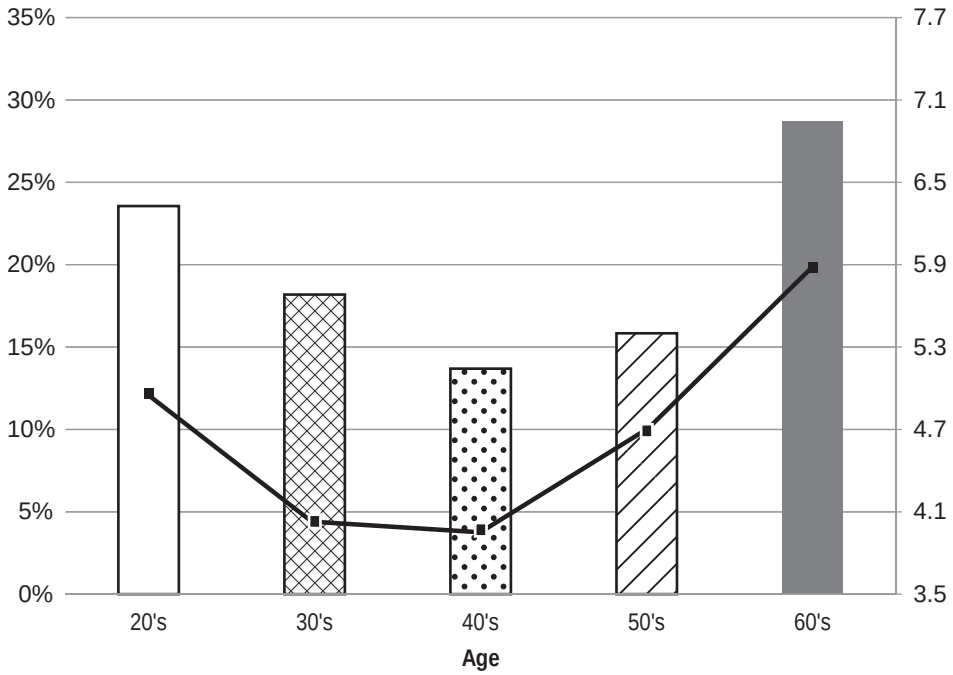

Figure 4 (1): Age Composition and Life Satisfaction of Relative Wealth Level 1

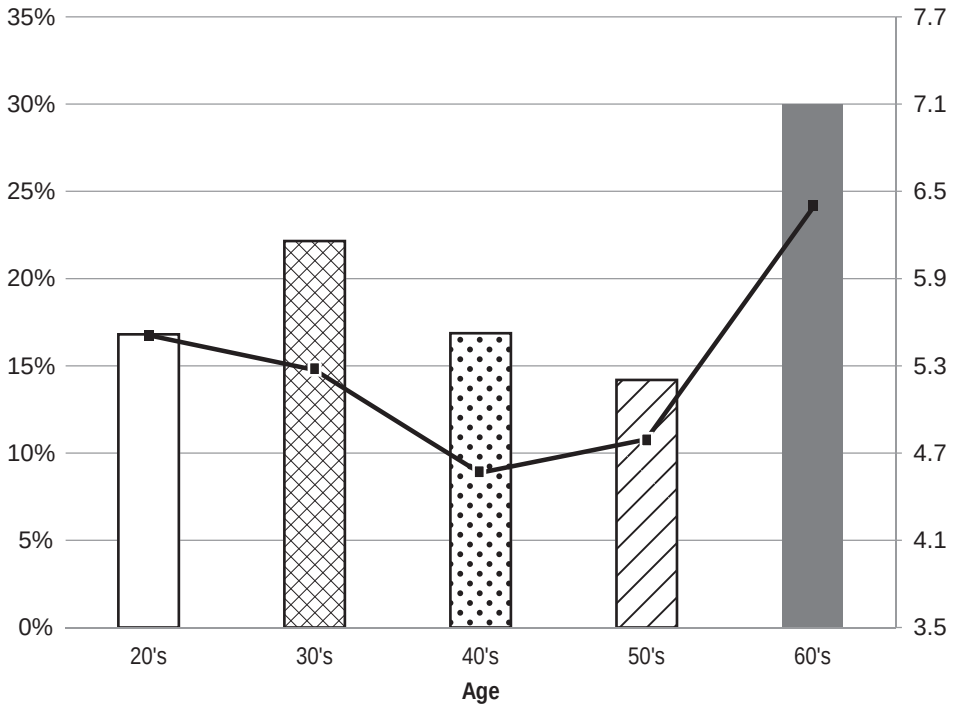

Figure 4 (2): Age Composition and Life Satisfaction of Relative Wealth Level 2

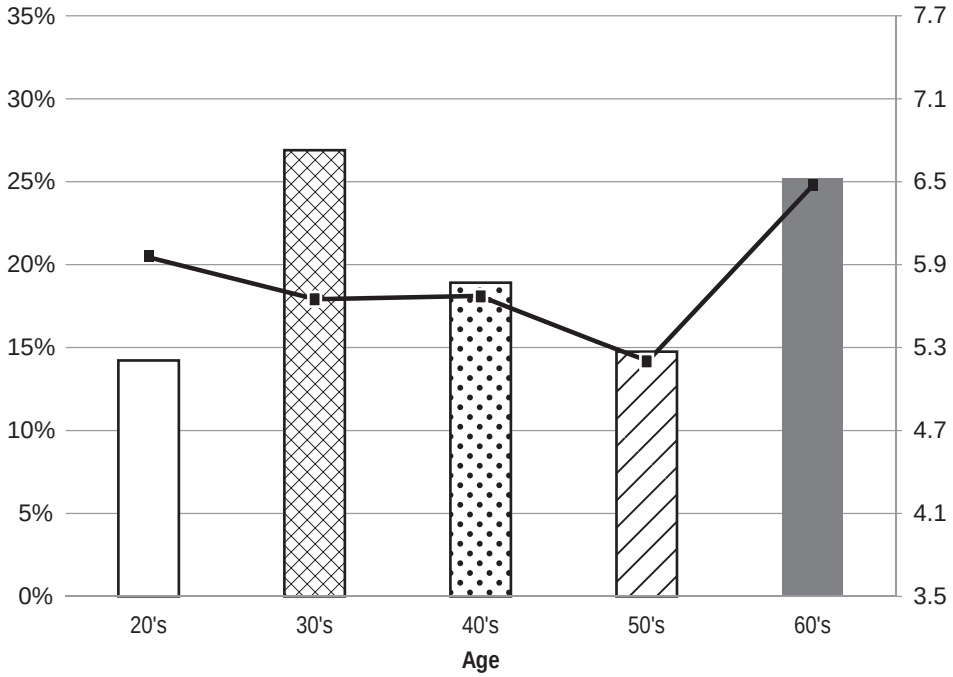

Figure 4 (3): Age Composition and Life Satisfaction of Relative Wealth Level 3

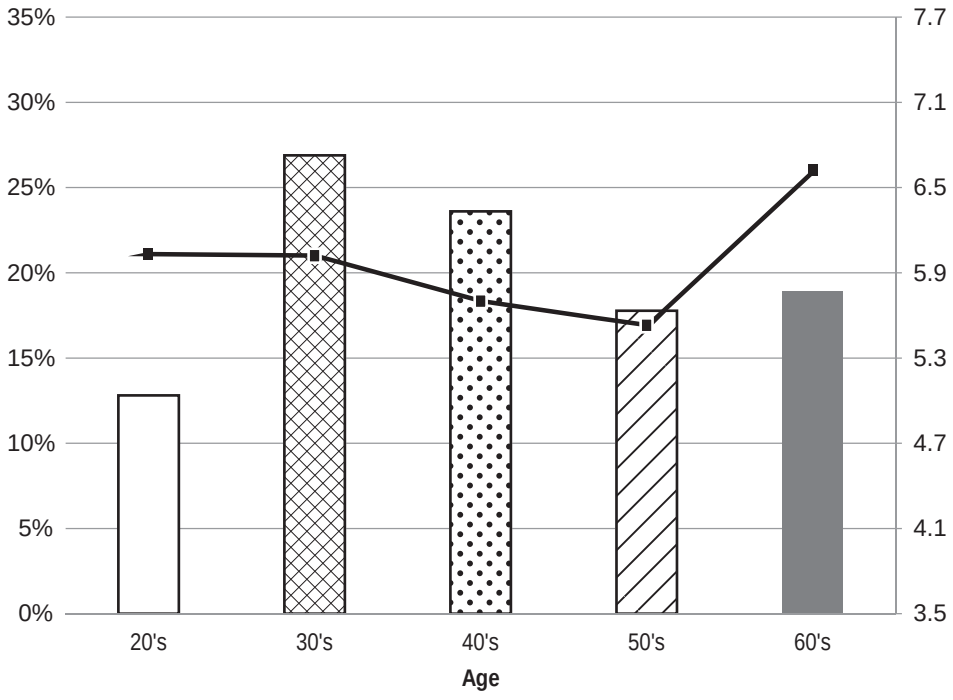

Figure 4 (4): Age Composition and Life Satisfaction of Relative Wealth Level 4

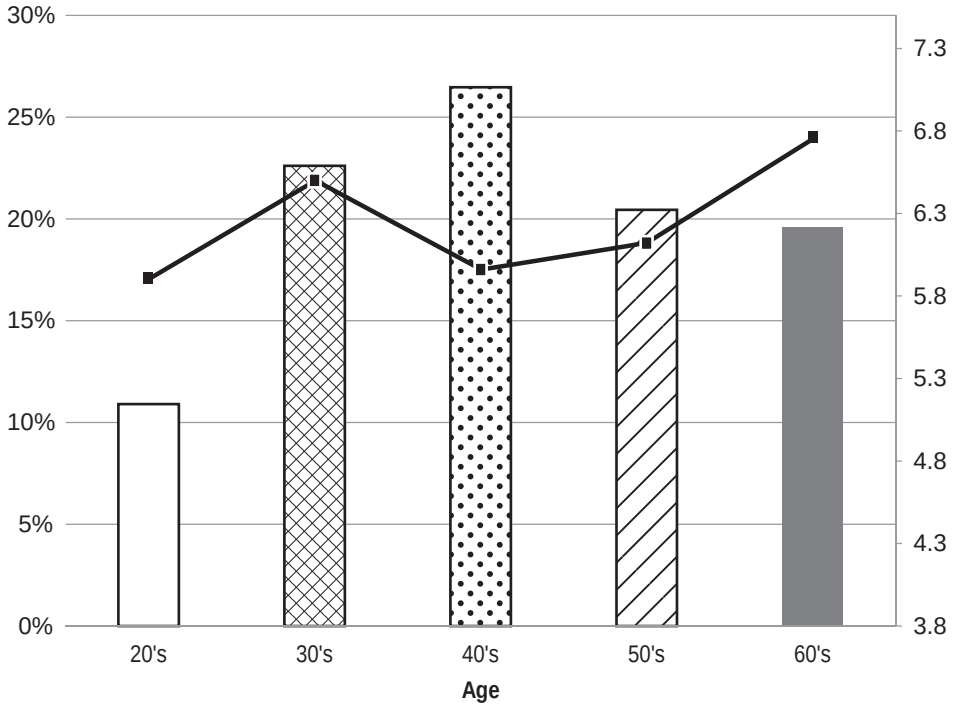

Figure 4(5): Age Composition and Life Satisfaction of Relative Wealth Level 5

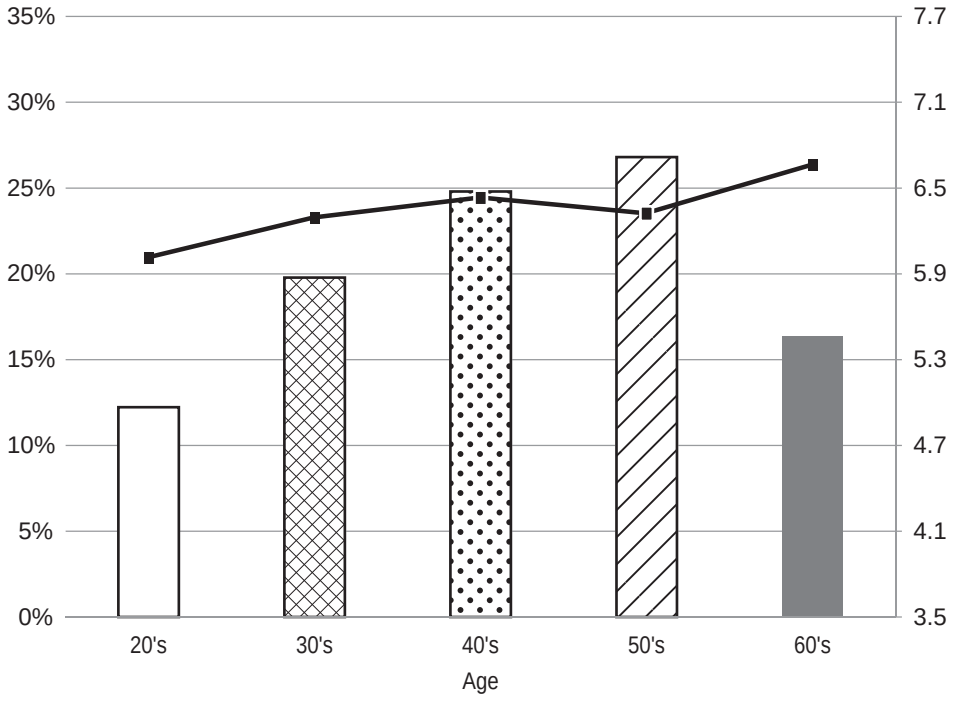

Figure 4(6): Age Composition and Life Satisfaction of Relative Wealth Level 6

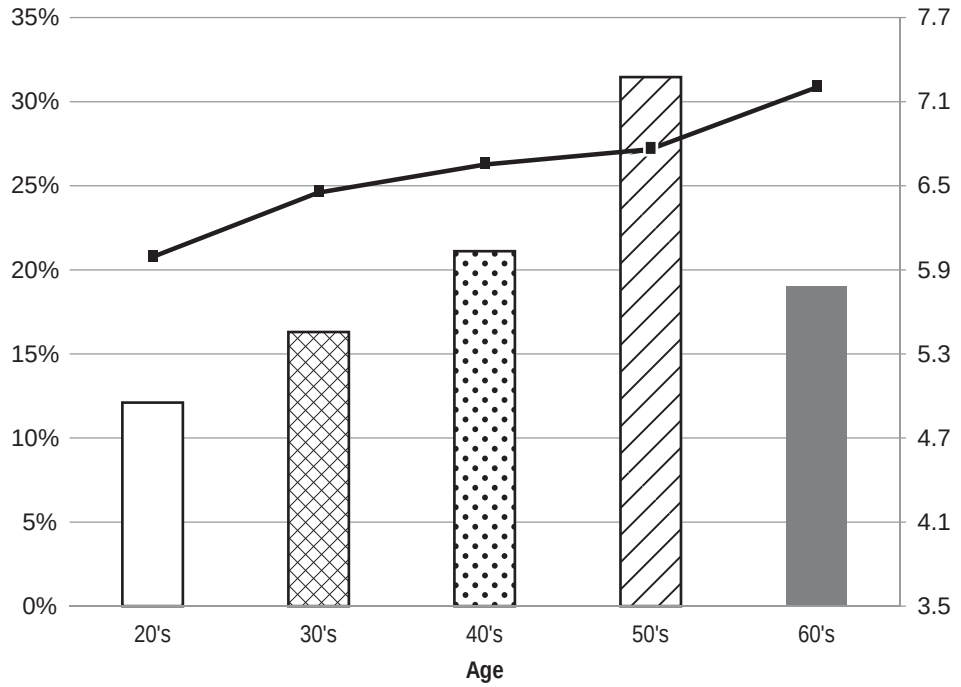

Figure 4(7): Age Composition and Life Satisfaction of Relative Wealth Level 7

the 20s segment has consistently lower life satisfaction than all other age segments (6.01 for Level 6 and 6.00 for Level 7, both the lowest within their relative wealth level). Despite attaining relative wealth levels of Level 6 and 7 in their 20s, a substantially high level when viewed in the social context, these young people in the 20s segments feel lower life satisfaction than those in the other age segments at similar wealth levels. These figures will require further analysis in the future.

On the contrary, the life satisfaction curve for relative wealth Level 5 is mixed, somewhere in between the U-shaped curve of Levels 1-4 and the increasing trends of Levels 6-7. The 40s segment holds the highest share of this level at 26%, but it has lower life satisfaction at 5.96, close to that of the 20s segment at 5.91. Life satisfaction for Level 5 is highest for the 60 and over segment at 6.76.

6. Conclusion

In summary, it has emerged from the analysis to date (for the Japanese surveys) that while life satisfaction is partially dependent upon work and income, it also differs greatly depending upon the individual's stage of life (young, middle age or older). The young, with many years still in front of them, can envision a bright future for themselves and look positively at their current status. This assumption does follow to a certain extent given the progression in wages from the 20s to 50s age segments. As young people in their 20s can envision their wages eventually

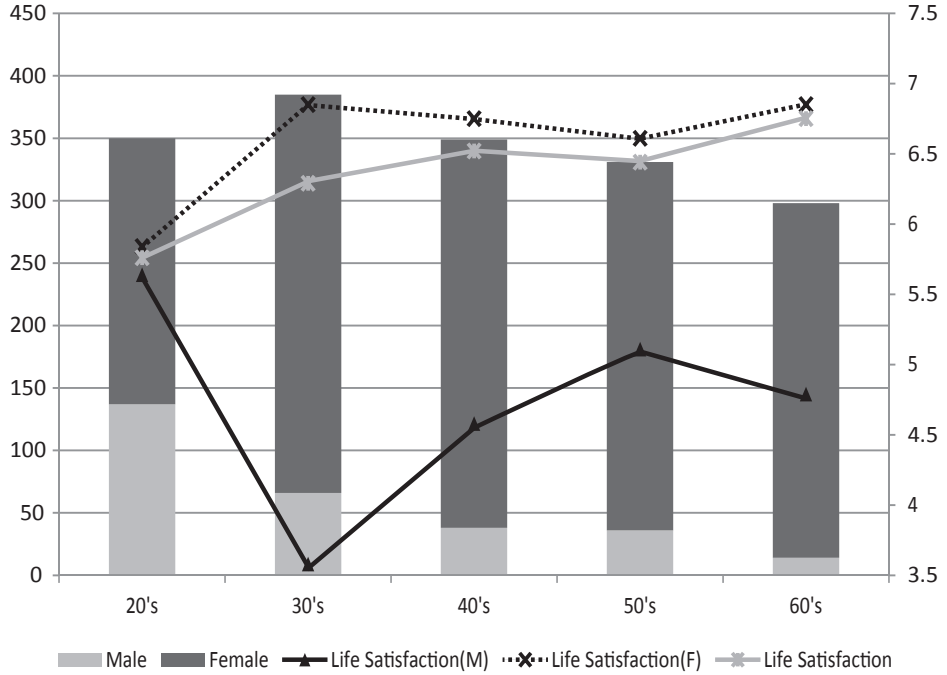

Figure 5 (1): Male / Female Ratio, Age Composition and Life Satisfaction of Relative Wealth Level (Individual income) 1

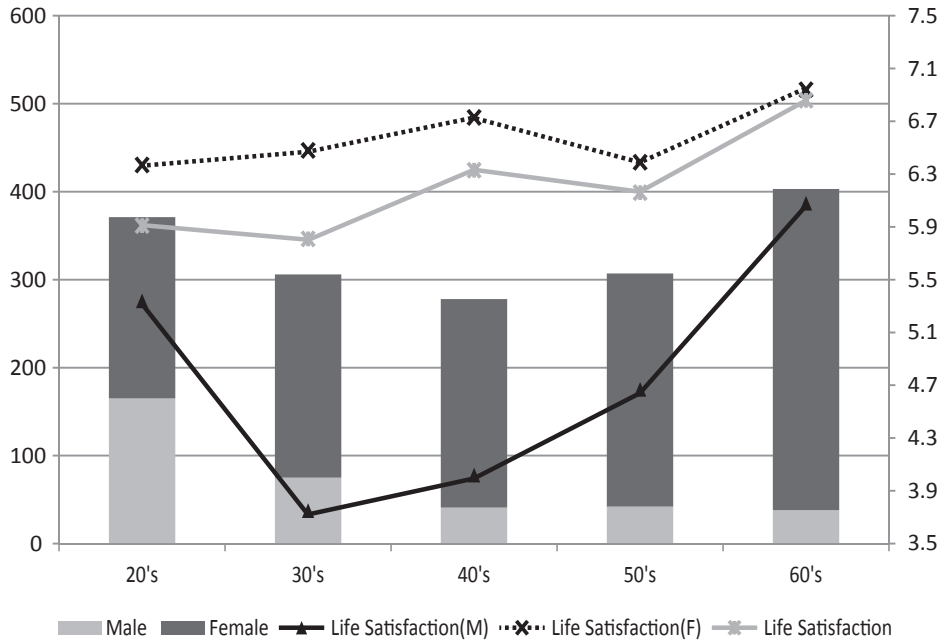

Figure 5 (2). Male / Female Ratio, Age Composition and Life Satisfaction of Relative Wealth Level (Individual income) 2

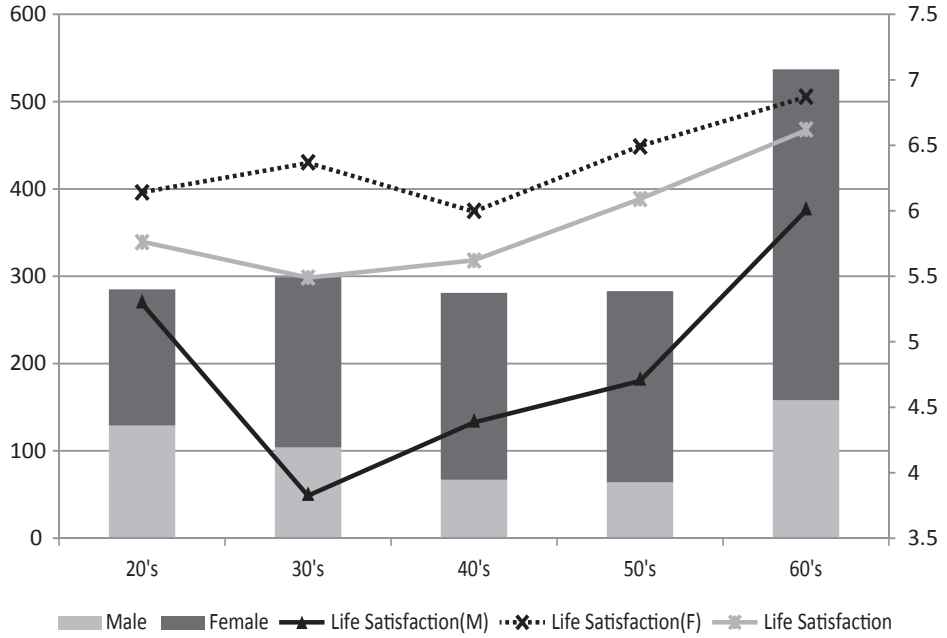

Figure 5 (3): Male / Female Ratio, Age Composition and Life Satisfaction of Relative Wealth Level (Individual income) 3

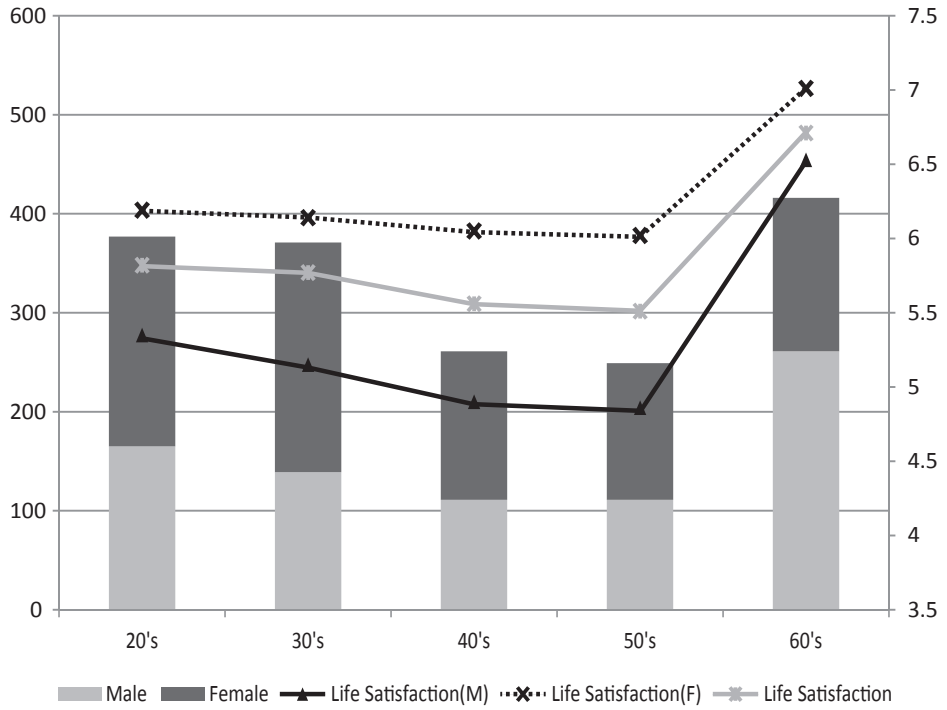

Figure 5 (4): Male / Female Ratio, Age Composition and Life Satisfaction of Relative Wealth Level (Individual income) 4

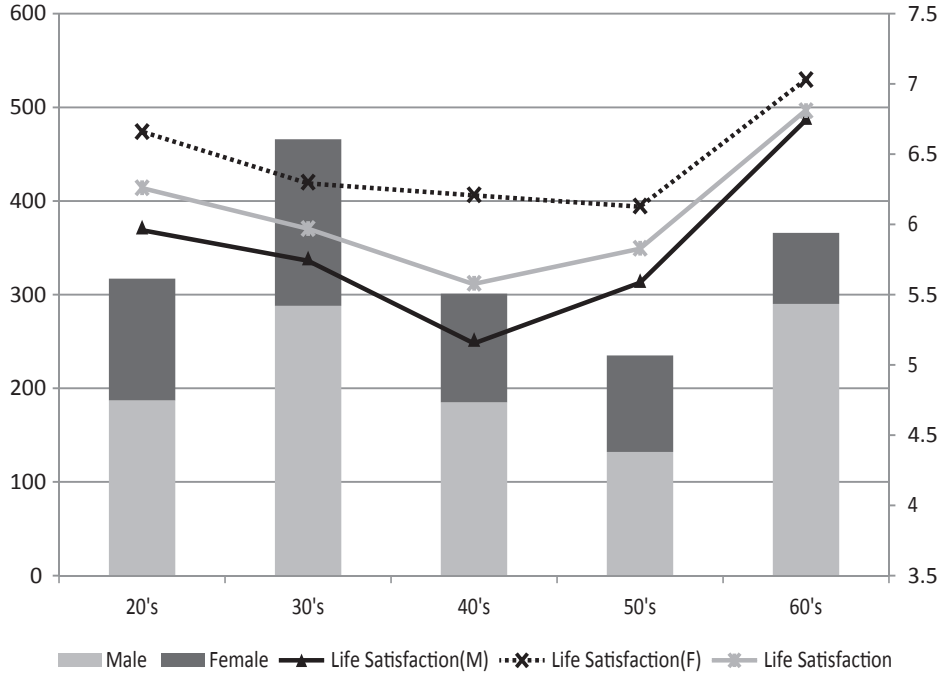

Figure 5 (5): Male / Female Ratio, Age Composition and Life Satisfaction of Relative Wealth Level (Individual income) 5

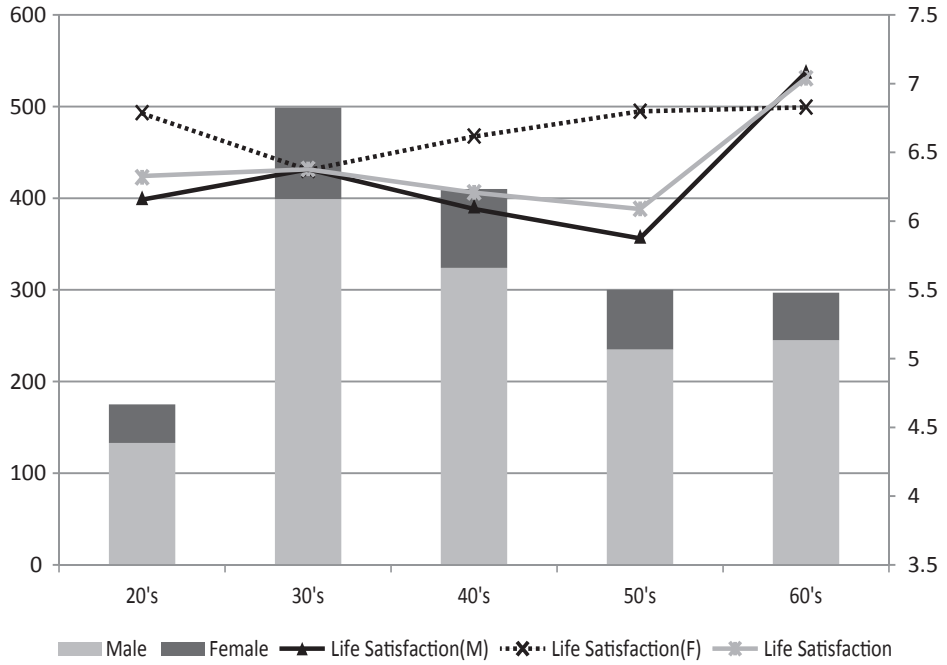

Figure 5 (6): Male / Female Ratio, Age Composition and Life Satisfaction of Relative Wealth Level (Individual income) 6

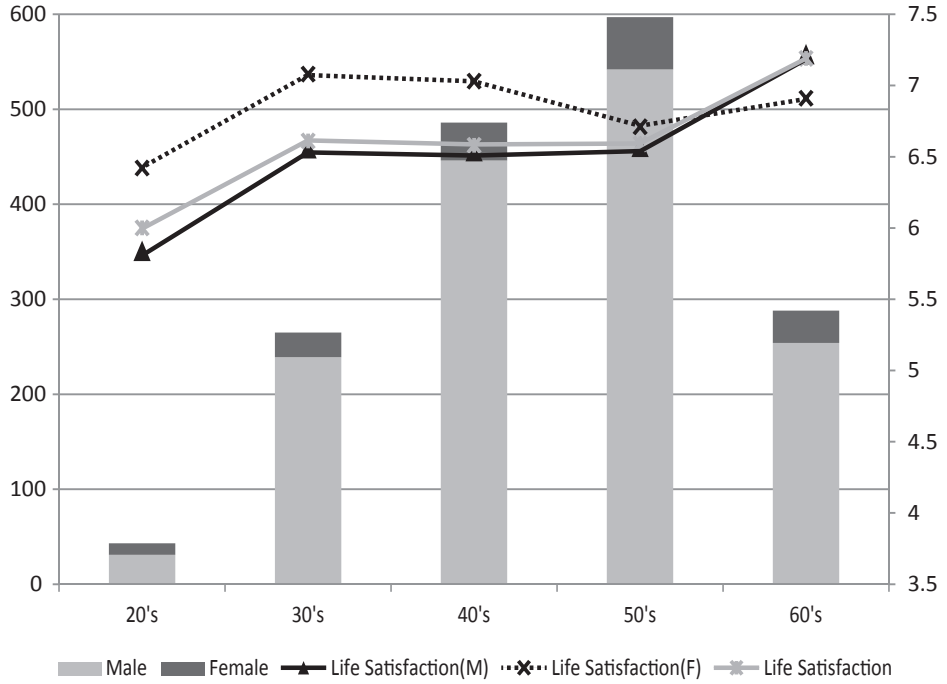

Figure 5 (7): Male / Female Ratio, Age Composition and Life Satisfaction of Relative Wealth Level (Individual income) 7

increasing in the future, they are not that discontent with the status quo. Meanwhile, as people move away from work and approach old age, all people tend to take a more pessimistic stance. Based on these generalized mentalities, it is surprising that Japan's elderly have consistently high life satisfaction, both relatively and overall, despite no hopeful future prospects.[5] This will also require yet further analysis in the future.

In addition to the above analysis, Figure 5 accounts for the breakdown between men and women. Here, however, the figures are referenced to relative income, which is based on respondent household income. Note that here too, only three cases are published (poorest (1), moderate level (4) and wealthiest (7)) in order to avoid excessive complexity. The point of note here is that in all three cases, compared to both the same ages and the same relative wealth levels, life satisfaction is always higher for women than men. While the gender gap narrows as wealth levels and age increases, as in Case 7, life satisfaction is never higher for men than for women. Also, the percentage of women is highest in the poorest segment (Case 1), and the percentage of men is highest in the wealthiest segment (Case 7). It is likely that these results are affected by Japan's employment and work environments, as well as the perpetuation of traditional family roles (the husband concentrates on working outside the home to earn income, while the

[5] Life satisfaction remains high for the 60 or older segment at 5.88 for the poorest Level 1, 6.40 for Level 2, 6.48 for Level 3, 6.62 for Level 4, 6.76 for Level 5, 6.66 for Level 6 and 7.21 for the wealthiest Level 7.

wife stays home to focus on home affairs) and other traditional values. This also needs to be analyzed further in the future and is listed as an issue to be studied.

The above three points are subjects for further investigation, while the current paper serves as the tentative report for the Japanese survey (conducted in February 2015).

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